



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,686	09/30/2004	Mark A. Fredette	20.2915	5685

23718 7590 05/11/2006

SCHLUMBERGER OILFIELD SERVICES  
200 GILLINGHAM LANE  
MD 200-9  
SUGAR LAND, TX 77478

EXAMINER
----------

FULTON, CHRISTOPHER W

ART UNIT	PAPER NUMBER
----------	--------------

2859

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/711,686	<b>Applicant(s)</b> FREDETTE ET AL.	
	<b>Examiner</b> Christopher W. Fulton	<b>Art Unit</b> 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2006.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-21 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-14 and 16-21 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 30 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 16 is objected to because of the following informalities: Claim 16 depends from claim 15 which has been canceled. For examination purposes claim 16 will be treated as if it is dependent on claim 12. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 1, 2, 8-10, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt-Grubbe in view of Groner et al.

The device as claimed is substantially disclosed by Hunt-Grubbe with a tool body 12, a plurality of arms 32 coupled by a pivot 36 to the tool body, a cam 40 coupled to the arm such that the position of the cam changes as the arm deflects, and a proximity sensor 70 for sensing

the position of the cam, but lacks the proximity sensor being a non-contact differential variable reluctance transducer and the cam mass moving away from the proximity sensor when the follow arm moves away from the body. The Hunt-Grubbe reference does not disclose any particular proximity sensor, but discloses the use of any old and well known proximity sensor. Non-contact differential variable reluctance transducers are old and well known proximity sensors. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a non-contact differential variable reluctance transducer in the Hunt-Grubbe device as an old and well known proximity sensor. Groner et al teaches placing the cam mass in such a position that the cam mass moves away from the proximity sensor when the follow arm moves away from the body. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to move the cam mass of Hunt-Grubbe to a position that the cam mass moving away from the proximity sensor when the follow arm moves away from the body as taught by Groner et al an alternative location for determining the location of the follower arm.

4. Claims 11 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt-Grubbe in view of Smith et al.

The device as claimed is substantially disclosed by Hunt-Grubbe with a tool body 12, a plurality of arms 32 coupled by a pivot 36 to the tool body, a cam 40 coupled to the arm such that the position of the cam changes as the arm deflects, and a proximity sensor 70 for sensing the position of the cam, but lacks the proximity sensor being a non-contact differential variable reluctance transducer and the follower having a contact pad to protect the follower. The Hunt-Grubbe reference does not disclose any particular proximity sensor, but discloses the use of any

Art Unit: 2859

old and well known proximity sensor. Non-contact differential variable reluctance transducers are old and well known proximity sensors. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a non-contact differential variable reluctance transducer in the Hunt-Grubbe device as an old and well known proximity sensor. Smith et al teaches using a pad 20 to protect the follower from damage. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a pad to the follower of Hunt-Grubbe as taught by Smith et al to protect the follower from damage.

5. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt-Grubbe in view of Groner et al as applied to claims 1, 2, 8-10, and 21 above, and further in view of Deaton ('056).

The device as claimed is disclosed by the combination of Hunt-Grubbe and Groner et al together as stated in the rejection recited above for claims 1, 2, 8-10, and 21, but lacks bow springs to bias the arms outward toward the surface of the borehole. Deaton teaches using bow springs 25 to bias the arms outwardly into contact with the surface of the borehole. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a bow spring in the combination of Hunt-Grubbe and Groner et al together as taught by Deaton to bias the arm outward toward the surface of the borehole.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt-Grubbe in view of Smith et al as applied to claims 11 and 17-20 above, and further in view of Deaton ('056).

The device as claimed is disclosed by the combination of Hunt-Grubbe and Smith et al together as stated in the rejection recited above for claims 11 and 17-20, but lacks bow springs to bias the arms outward toward the surface of the borehole. Deaton teaches using bow springs 25 to bias the arms outwardly into contact with the surface of the borehole. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a bow spring in the combination of Hunt-Grubbe and Smith et al together as taught by Deaton to bias the arm outward toward the surface of the borehole.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt-Grubbe in view of Groner et al and Deaton ('056) as applied to claims 3 and 5 above, and further in view of Moake et al and Smith et al.

The device as claimed is disclosed by the combination of Hunt-Grubbe, Groner et al, and Deaton together as stated in the rejection recited above for claims 3 and 5, but lacks the bow spring being on the outside of the arm to contact the surface of the borehole and the follower having a contact pad to protect the follower. Moake et al teaches using a bow spring in contact with the surface of the borehole. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the bow spring and arm of the combination of Hunt-Grubbe and Deaton as taught by Moake et al so that the bow spring is in contact with the surface of the borehole. Smith et al teaches using a pad 20 to protect the follower from damage. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a contact pad in the contact area of the device of the combination of Hunt-Grubbe, Deaton, and Moake et al as is taught by Smith et al to increase the durability of the contact area.

Art Unit: 2859

8. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt-Grubbe in view of Smith et al and Deaton ('056) as applied to claim 12 above, and further in view of Moake et al.

The device as claimed is disclosed by the combination of Hunt-Grubbe, Smith et al, and Deaton together as stated in the rejection recited above for claim 12, but lacks the bow spring being on the outside of the arm to contact the surface of the borehole. Moake et al teaches using a bow spring in contact with the surface of the borehole. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the bow spring and arm of the combination of Hunt-Grubbe, Smith et al, and Deaton as taught by Moake et al so that the bow spring is in contact with the surface of the borehole.

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt-Grubbe in view of Groner et al and Deaton ('056) as applied to claims 3 and 5 above, and further in view of Bagnell.

The device as claimed is disclosed by the combination of Hunt-Grubbe, Groner et al, and Deaton together as stated in the rejection recited above for claims 3 and 5, but lacks the pivot point being between the arm and the bow spring. Bagnell teaches using a pivot point between the arm and the bow spring. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a pivot point between the arm and the bow spring of the combination of Hunt-Grubbe, Groner et al, and Deaton as taught by Bagnell to connect the arm between the bow spring and the body to support the bow spring and translate the motion of the bow spring to the measurement arm.

10. Claim 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt-Grubbe in view of Smith et al and Deaton ('056) as applied to claim 12 above, and further in view of Bagnell.

The device as claimed is disclosed by the combination of Hunt-Grubbe, Smith et al, and Deaton together as stated in the rejection recited above for claim 12, but lacks the pivot point being between the arm and the bow spring. Bagnell teaches using a pivot point between the arm and the bow spring. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a pivot point between the arm and the bow spring of the combination of Hunt-Grubbe, Smith et al, and Deaton as taught by Bagnell to connect the arm between the bow spring and the body to support the bow spring and translate the motion of the bow spring to the measurement arm.

#### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-14 and 16-21 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period



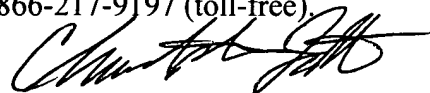
Art Unit: 2859

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher W. Fulton whose telephone number is (571) 272-2242. The examiner can normally be reached on M-Th 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F.F. Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher W. Fulton  
Primary Examiner  
Art Unit 2859

CWF